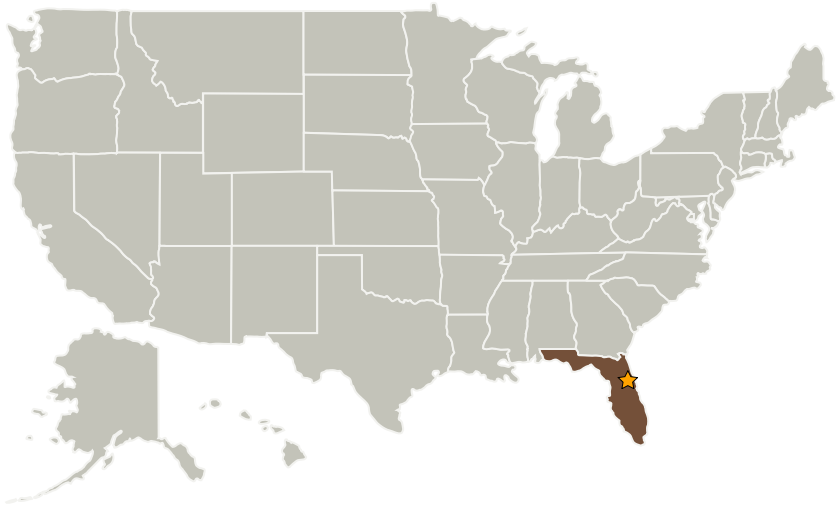
Hyperspectral Foveated Imaging Sensor for Objects Identification and Tracking, Phase I

Completed Technology Project (2007 - 2007)

Project Introduction

Optical tracking and identification sensors have numerous NASA and non-NASA applications. For example, airborne or spaceborne imaging sensors are used to visualize and track vehicles during launch and landing operations. Existing identification and tracking sensors cannot meet some of the advanced performance requirements including wide field of view (FOV) for panoramic situation awareness, high spatial resolution for detailed object shape discrimination, high spectral resolution for object material signature recognition, and fast response for transit event or moving objects tracking and identification, as well as low weight, volume and power requirements, et al. There is a demand to investigate innovative and unconventional optical or hyperspectral imaging systems to enhance the ability of today's tracking and identification systems for NASA as well as non-NASA applications. New Span Opto-Technology Inc. proposes herein a novel optical configuration that is capable of simultaneously providing wide FOV hyperspectral imaging for object detection and high spatial resolution in areas of interest without mechanical scanning for precise object recognition, positioning and tracking. In Phase I we will establish the model, demonstrate the feasibility, and recognize challenging issues of the proposed concept.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Kennedy Space Center (KSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
New Span Opto-Technology, Inc.	Supporting Organization	Industry Minority-Owned Business, Women-Owned Small Business (WOSB)	Miami, Florida

Primary U.S. Work Locations
Florida

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - TX16.5 Range Tracking, Surveillance, and Flight Safety Technologies